

MATHEMATICS

Competency 1:

Number Sense, Concepts & Operations

- **Real Numbers**
 - Integers
 - Whole
 - Natural
 - Negative
 - Prime
 - Even
 - Odd
 - Consecutive

- **Absolute Value**

- **Order of Operations**

- **Fractions**
 - Numerator
 - Denominator
 - Improper
 - LCD
 - Add/Subtract
 - Multiply
 - Divide
 - Compare
 - Simplify
 - Mixed
 - Add Mixed
 - Complex
 - ... to Decimal
 - ... to Percent

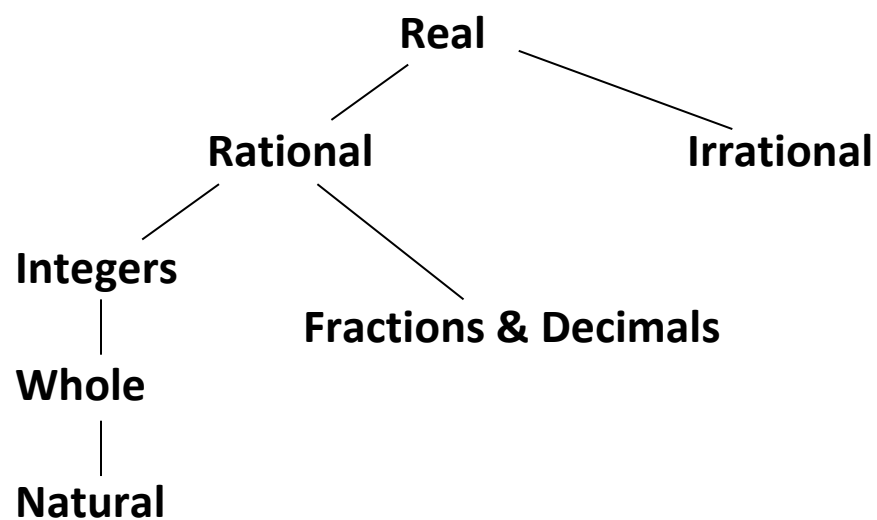
- **Decimals**

- **Add/Subtract**
- **Multiply**
- **Divide**
- **Compare**
- **... to Fraction**
- **... to Percent**

- **Percents**

- **Add/Subtract**
- **Multiply**
- **Divide**
- **Compare**
- **... to Fraction**
- **... to Decimal**

- **RATIONAL & IRRATIONAL**



- **RADICALS**
 - Simply
 - Add/Subtract
- **EXPONENTS**
 - Base
 - Power
 - Simplify
 - Multiply
- **SCIENTIFIC NOTATION**

NUMBER THEORY CONCEPTS

- **POLYNOMIALS**
- **PRIME FACTORS**
- **LEAST COMMON MULTIPLE**
- **GREATEST COMMON FACTOR**

End of Competency #1

MATHEMATICS (continued)

Competency 2: Measurement

- **TIME**
- **DISTANCE/LENGTH**
- **SPEED**
- **WEIGHT**
- **AREA**
- **VOLUME**
- **TEMPERATURE**

ENGLISH UNITS (Customary, U.S.)

- **Hour, Minute, Second**
- **Mile, Yard, Foot, Inch**
- **Miles/Hour**
- **Tons, Pounds, Ounces**
- **Acre**
- **Gallon, Quart, Pint, Cup, etc.**
- **Degrees**

METRIC UNITS

- **Length**
 - **Milli**
 - **Centi**
 - **Meters**
 - **Kilo**
- **Weight – Grams**
- **Volume - Liters**

CONVERSIONS

- English to Metric, Metric to English
- English to English, Metric to Metric

TEMPERATURE

- Fahrenheit
- Celsius
- Conversions

ESTIMATION

- Money
- Charts
- Area

MATHEMATICS (continued)

Competency 3: Geometry & Spatial Sense

- Point
- Line
- Plane
- Ray
- Angle
 - Right
 - Acute
 - Obtuse
 - Straight
 - Reflex
 - Complementary
 - Supplementary
 - Congruent
- Perpendicular
- Parallel

- **Triangles**
 - Perimeter
 - Base
 - Adjacent
 - Hypotenuse
 - Scalene
 - Isosceles
 - Acute
 - Obtuse
 - Right
 - Altitude (Height)
 - Median
 - Similar
 - Congruent
 - *The Pythagorean Theorem*

- **Polygons**
 - Equilateral
 - Equiangular
 - Regular
 - Apothem
 - Radius
 - Area

- **Quadrilaterals**
 - Parallelograms
 - Consecutive Angles
 - Altitude
 - Height

- **Rectangles**

- Rhombus (Rhombi)
- Squares
- Trapezoids
 - Median
 - Altitude
 - Height
 - Isosceles

FINDING AREA OF ...

- Triangle
- Rectangle
- Parallelogram
- Trapezoid
- Rhombus

Circles

- Radius
- Secant
- Chord
- Diameter
- Line of Centers
- Inscribed Angle
- Central Angle
- Point of Tangency
- Congruent Circles
- Circumscribed
- Circumference
- Area

SOLIDS

- **Prism**
 - Surface Area of ...
 - Volume of ...
- **Sphere**
 - Surface Area of ...
 - Volume of ...
- **Pyramid**
 - Surface Area of ...
 - Volume of ...
- **Cone**
 - Surface Area of ...
 - Volume of ...
- **Cylinder**
 - Surface Area of ...
 - Volume of ...

RATIO & PROPORTION

- **Ratio**
- **Proportion**
 - Extremes
 - Means

Coordinate Geometry, Plotting and Graphing

- Cartesian
- Y-axis
- X-axis
- Origin
- Coordinate(s)
- Line
- Slope

Graphs of Functions

Scaled Drawings

Spatial Sense / Relationships

MATHEMATICS (continued)

Competency 4: Algebraic Thinking

- **Constant**
- **Variable**
- **Term**
- **Coefficient**
- **Expression**
- **Monomial**
- **Binomial**
- **Trinomial**
- **Polynomial**

Algebraic Laws

- **Commutative**
 - **Addition**
 - **Multiplication**
- **Associative**
 - **Addition**
 - **Multiplication**
- **Distributive**

Operations w/Polynomials

- **Addition**
- **Subtraction**
- **Multiplication (of 2 or more)**
- **Multiplication (of Mono & Poly)**
- **Multiplication (of Poly & Poly)**
- **Division (of Mono & Mono)**
- **Division (of Poly & Poly)**

Interpreting Expressions

- **Factors**
- **Prime Factors**
- **Least Common Multiple (LCM)**
- **Greatest Common Factor (GCF)**

Factoring & Simplifying

Solving Equations & Inequalities

- **Solution**
- **Equivalent (equations)**
- **Empty (null) Set**
- **Adding**
- **Subtracting**
- **Raising to a Power**
- **Reciprocals**

Linear Equations

- **Consistent & Inconsistent**
 - **Add / Subtract**
 - **Substitute**
 - **Graph**

Quadratic Equations

- **Direct Solutions**
- **Factoring**
- **Completing the Square**

Absolute Value Equations

Inequalities

- **Conditional**
- **Absolute**

Properties of Inequalities

- **Transitive**
- **Addition**
- **Sense**
- **Equivalent**

Word Problems

- Rate
- Work

MATHEMATICS (continued)

Competency 5: Data Analysis & Probability

Reading Graphs

- Line graphs
- Bar graphs
- Pie graphs

Reading Tables

Statistical Concepts

- Range
- Sample Survey
- Central Tendency
 - Mean
 - Median
 - Mode
- Spread of Data
- Standard Deviation
- Percentile
- Frequency Distribution

Probability & Statistics

- Probability
- Statistics
- Populations
- Odds
- Permutation
- Combination